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OTITIDAE FROM THE GALÁPAGOS ISLANDS (DIPTERA, ACALYPTRATAE)[1]

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Flies of the family Otitidae have been reported from the Galápagos Islands in 4 papers: Coquillett, 1901 (110 specimens); Johnson, 1924 (60 specimens); Curran, 1932 (5 specimens); Curran, 1934 (2 specimens). The species recorded therein are as follows:

Acrosticta scrobiculata Loew. Santa María, 5—Curran, 1932, p. 354.

Euxesta galapagensis Curran. Española, 1—Curran, 1934, p. 156.

Euxesta nitidiventris Loew. Isabela and Santa María, 13—Coquillett, 1901, p. 376; Santa Cruz, 1—Curran, 1934, p. 156.

Euxesta notata (Wiedemann). Santa María, 1—Coquillett, 1901, p. 376.

Pareuxesta hyalinata Coquillett. Isabela, 2—Coquillett, 1901, p. 377.

Pareuxesta intermedia Coquillett. Isabela, 3—Coquillett, 1901, p. 377.

Pareuxesta latifasciata Coquillett. Genovesa, 70—Coquillett, 1901, p. 376; Genovesa, 53—Johnson, 1924, p. 89.

Pareuxesta obscura Coquillett. Isabela, 21—Coquillett, 1901, p. 377; Daphne Major, 7—Johnson, 1924, p. 90.

The species recorded by Curran as *Acrosticta scrobiculata* has proven to be the very widespread and closely related *Acrosticta apicalis* (Williston), (see below). The records for *Euxesta nitidiventris* Loew by Coquillett prove actually to refer to two of the species described below, but the specimen recorded from Santa Cruz by Curran has not been seen. It has not been possible to find the specimen referred by Coquillett to *Euxesta notata* (Wiedemann), but since no other specimen of the species has been taken, and especially since other species of superficially similar appearance do occur, the record must be

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considered very doubtful. I have been able to examine the types and some additional material of all of the species of *Pareuxesta*.

The material collected by members of the 1964 Galápagos International Scientific Project comprises 109 specimens of Otitidae. This material has been worked up, and the present status of the family in the Galápagos may be summarized as follows:

	Santa María	*Isabela*	*Santa Cruz*	*Genovesa*	*Pinzón*	*Wolf*	*Fernandina*	*Española*	*Daphne Major*
Acrosticta apicalis (Williston)	×								
Euxesta callona, new species			×						
Euxesta cavagnaroi, new species						×			
Euxesta galapagensis Curran			×		×	×	×	×	
Euxesta nesiotis, new species					×				
Euxesta notata (Wiedemann)	×								
Euxesta phoeba, new species			×						
Euxesta schusteri, new species	×	×	×						
Euxesta spodia, new species			×						
Pareuxesta academica, new species			×		×				
Pareuxesta hyalinata Coquillett		×							
Pareuxesta intermedia Coquillett		×							
Pareuxesta latifasciata Coquillett				×					
Pareuxesta obscura Coquillett		×							×
Pareuxesta xanthomera, new species			×						

It may be noted from the table that most of the species are recorded from but one island. *Euxesta galapagensis* Curran has been found on five islands, *E. schusteri,* new species, on three islands, and *Pareuxesta academica,* new species, on two islands. However, seven species are known from Isla Santa Cruz and more than one species from most of the other listed islands, although not one has been collected on several islands of the group. In view of this and the fact that the several expeditions have all gathered different species, it would seem quite evident that knowledge of the Otitidae of the Galápagos is still far from definitive and that a number of additional species may be expected. All of the species, except *Acrosticta apicalis* (Williston), are endemic, so far as is known, and their relationships seem to be with species of the mainland of South America; one of them, *Euxesta spodia,* new species, is very similar to *Euxestina fuscipennis* Curran, described from British Guiana.

Notes and Descriptions

Some of the characters used herein may be more precisely defined as follows. The upper cheek, sometimes called lower orbit, is that part of the side of the head below the eye and dorsad of the setae; it is bare, usually light in color, and dull. The medifrontal setae are proclinate hairs, often stout, situated between

the two parafrontal rows of bristles and hairs and disposed in two or more rows converging anteriorly and becoming shorter laterally. The prescutellar acrostichal bristles are always at least slightly posteriad of the posterior dorsocentral bristles; their position is expressed by the angle subtended by a line drawn from the acrostichals to the nearest dorsocentral and a line connecting the two posterior dorsocentrals.

The following abbreviation symbols are used: DQC (collector) D. Q. Cavagnaro; ROS (collector) R. O. Schuster; USNM, United States National Museum.

Since all of the material is from the Galápagos Islands, that fact is not further stated in the locality citations. All material is deposited in the collection of the California Academy of Sciences, unless otherwise stated.

KEY TO GENERA AND SPECIES OF *Otitidae* KNOWN FROM THE GALÁPAGOS ISLANDS

1 (16). Anal vein in apical ½ turning apicad and becoming very faint, but continuing to wing margin; 1st vein only occasionally with a few sporadic setae; prescutellar acrostichals normally present.

2 (3). Front deeply wrinkled ..... Genus *ACROSTICTA* Loew.
One species, *A. apicalis* (Williston): front with wavy cross-ridges; tarsus 1 wholly black; femur 1 yellowish.

3 (2). Front smooth ..... Genus *EUXESTA* Loew.

4 (5). Distance from posterior end of posterior crossvein along 5th vein to wing margin as great as the length of posterior crossvein; 5th vein well developed less than halfway from posterior crossvein to margin; entire costal margin with black seam (fig. 3a); front, mesonotum, and dorsum of abdomen more or less shining; antenna and interantennal space dull black; eye in life with purple median horizontal band (fig. 3b) ..... *E. galapagensis* Curran.

5 (4). Distance from posterior end of posterior crossvein along 5th vein to wing margin not more than ½ as great as the length of posterior crossvein; 5th vein well developed for at least ⅔ of distance from posterior crossvein to margin; face without dull black interantennal space; eye in life unicolorous.

6 (7). Entire body strongly pruinose; wing black, except brown base and whitish posterior margin (fig. 4a) ..... *E. spodia,* new species.

7 (6). At least dorsum of abdomen more or less shining; wing largely hyaline; with apical spot (sometimes faint) extending posteriad into 1st posterior cell; costal cell largely hyaline; front reddish.

8 (11). Pterostigma distinctly darkened, brown to blackish, especially apically; face, especially in lower ½, lightly pruinose, subshining.

9 (10). Femora and coxa 1 wholly yellowish ..... *E. callona,* new species.

10 (9). At least femur 2 and femur 3 blackish; coxa 1 at least with broad blackish lateral stripe ..... *E. nesiotis,* new species.

11 (8). Pterostigma hyaline to yellowish; face below either distinctly pruinose or polished.

12 (13). Femora yellow to reddish; clypeus, lower ½ of face, front, scutellum, and dorsum of abdomen polished; humeral cell of wing dark brown; apical wing spot distinct ..... *E. schusteri,* new species.

13 (12). Femora black, reddish only apically; entire face and clypeus whitish pruinose; humeral cell at most slightly darkened; apical wing spot diffuse.

14 (15). Front and dorsum of abdomen distinctly pruinose; wing 2.5 times as long as wide (fig. 2) ..... *E. cavagnaroi,* new species.

15 (14). Front and dorsum of abdomen shining; wing 2.85 times as long as wide (fig. 1) ..... *E. phoeba,* new species.

16 (1). Anal vein completely discontinued about halfway to wing margin; 1st vein with well developed series of setae on upper side in apical 3rd; prescutellar acrostichals present, except in *Pareuxesta xanthomera* ..... Genus *Pareuxesta* Coquillett.

17 (18). Wing wholly yellowish hyaline; ♀ penultimate preabdominal tergite blackish ..... *P. hyalinata* Coquillett.

18 (17). Wing with conspicuous blackish pattern.

19 (22). Antepenultimate wing band meeting basal ½ of pterostigma and extending therefrom continuously to or a little beyond anal vein; subbasal dark mark strong and distinct (figs. 5a, 6); penultimate abdominal tergite reddish or black; legs blackish.

20 (21). Apical dark section of 1st posterior cell nearly as long as preapical hyaline section; angle between penultimate dark band and costal margin basad thereof 90° (fig. 5a); ♀ with last 2 preabdominal tergites yellow ..... *P. latifasciata* Coquillett.

21 (20). Apical dark section of 1st posterior cell much shorter than preapical hyaline section; angle between penultimate dark band and costal margin basad thereof distinctly more than 90° (fig. 6); ♀ penultimate preabdominal tergite blackish ..... *P. intermedia* Coquillett

22 (19). Antepenultimate wing band meeting much less than basal ½ of pterostigma, sometimes interrupted or failing to meet anal vein (figs. 7–9); subbasal dark mark strong or weak; ♀ penultimate preabdominal tergite blackish; legs reddish to black.

23 (24). Femora, at least femur 1, yellow; penultimate wing band arcuate, forming angle of more than 90° with costal margin basad thereof; antepenultimate band extending continuously from pterostigma through extension of anal cell to or nearly to posterior margin of wing; subbasal dark mark strong, very oblique (fig. 9) ..... *P. xanthomera,* new species.

24 (23). Femora blackish; penultimate wing band straight or arcuate.

25 (26). Penultimate wing band straight, forming 90° angle with costal margin basad thereof; antepenultimate band continuous to anal vein; subbasal dark mark strong and distinct (fig. 7) ..... *P. obscura* Coquillett.

26 (25). Penultimate band arcuate, forming angle of more than 90° with costal margin basad thereof; antepenultimate band disjunct in discal cell, leaving more or less isolated dark spot on 5th vein; subbasal dark mark faint and diffuse (fig. 8) ..... *P. academica,* new species.

Acrosticta apicalis (Williston).

Euxesta apicalis Williston, 1896. Trans. Ent. Soc. London, 1896, p. 375.

Curran (1932, p. 354) recorded this species from Isla Santa María as *Acrosticta scrobiculata* Loew. Through the courtesy of Peter Wygodzinsky, I have been able to examine a specimen from the Wollebaek Expedition in the American Museum of Natural History and find that it may more properly be referred to *A. apicalis,* which species was described from St. Vincent Island in the West Indies and is now known to be tropicopolitan.

Euxesta callona Steyskal, new species.

(Figure 11.)

FEMALE. Length of wing 3.27 to 4.03 mm. (2 specimens).

Color metallic bluish to greenish with bronzy reflections, the following parts yellowish to reddish: front (except ocellar triangle and vertical plates), parafacial, cheek, antenna, palpus, trochanter, femur, halter, tibia and tarsus brown. Mesonotum and scutellum very lightly whitish pruinose, nearly shining; pleura and sternum, especially the latter, a little more pruinose; abdomen shining. Front shining, except very narrow, white pruinose orbits. Face strongly white pruinose above the tranverse depression, very lightly pruinose below.

Head with front parallel-sided, 0.34 of head width. Profile similar to that of *E. cavagnaroi* (fig. 10a), but face with 120° angular transverse depression; cheek ⅔ as wide as 3rd antennal segment; antenna extending to lower margin of face, with 3rd segment 1.5 to 1.75 times as long as wide. Medifrontal setae in four rows. Ocellar triangle as in figure 11.

Thorax uniformly subshining; acrostichal hairs in six rows; prescutellar acrostichals strong, about 30° behind line connecting posterior dorsocentrals. Femur 1 much as figured for *E. cavagnaroi* (fig. 10b). Wing with venation similar to that of *E. phoeba* (fig. 1), but a little broader (2.65 times as long as wide) and apical spot more distinct and brown, pterostigma distinctly brownish infuscate, especially apically, and root of wing distinctly brownish infuscate, especially apically, and root of wing distinctly brownish.

Abdomen wholly shining, tergite 3 twice as long as tergite 4, tergite 5 hidden.

MALE. Similar to female. Length of wing 2.51 mm. Single available specimen obviously a "runt."

TYPES. Holotype (♀), Isla Santa Cruz, Academy Bay, Darwin Research Station, 13–II–1964 (DQC and ROS); allotype (♂), Isla Santa Cruz, Table Mountain, 440 m., 16–IV–1964 (DQC); paratype (♀), Isla Santa Cruz (Indefatigable Island), 6–V–1932 (M. Willows, Jr.), Templeton Crocker Expedition 1932, determined by Curran as *E. nitidiventris* Loew.

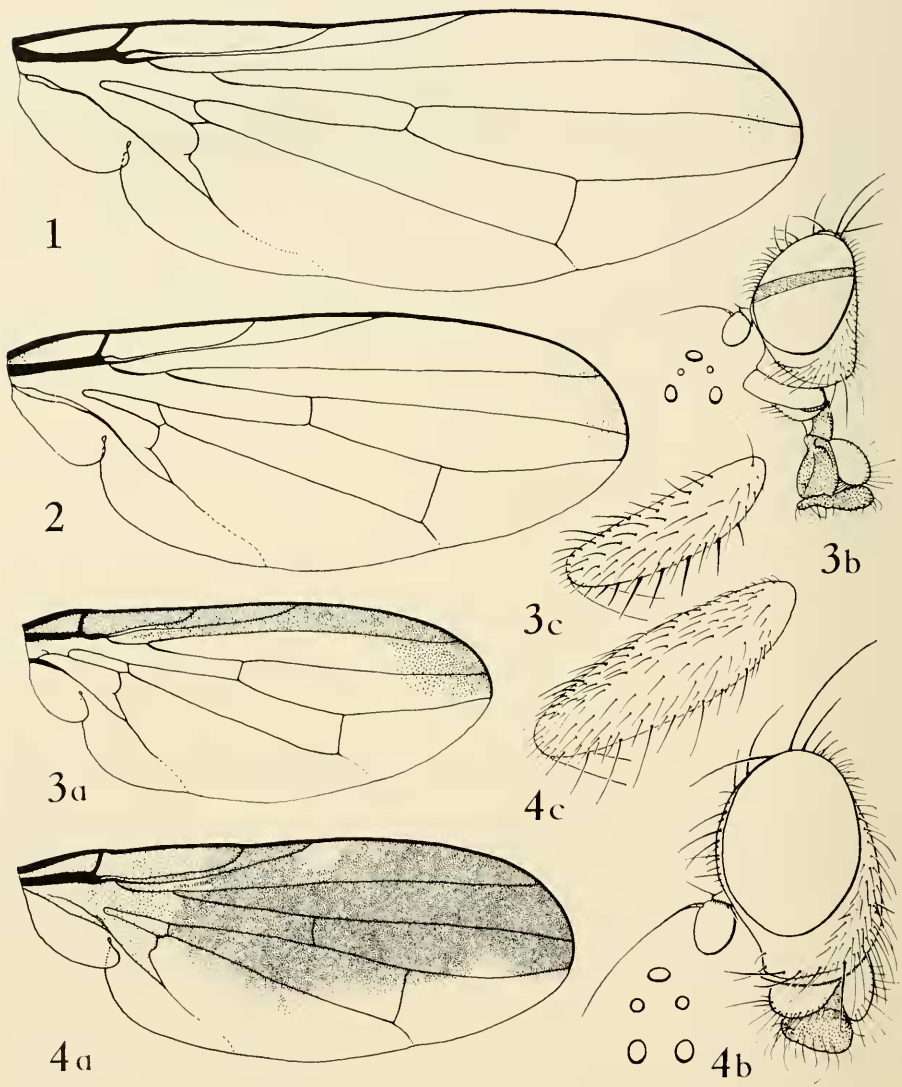
This species, as shown in the key, is apparently most closely related to *E. nesiotis*, new species.

Euxesta cavagnaroi Steyskal, new species.

(Figures 2, 10a, 10b.)

FEMALE. Length of wing 2.99 to 3.58 mm. (average of eight specimens 3.29 mm.).

Color metallic greenish black, the following parts yellowish to reddish: front (except ocellar triangle and vertical plates), parafacial, upper cheek, basal segments and base and lower side of 3rd segment of antenna, palpus, apex of coxa, trochanter, and tarsus. Entire body whitish pruinose, but not heavily, and quite lightly on legs and dorsum of abdomen; pruinosity on front in form of



FIGURES 1–4. *Euxesta* species. *Euxesta phoeba,* n. sp., 1, wing; *E. cavagnaroi,* n. sp., 2, wing; *E. galapagensis* Curran, 3a, wing; 3b, profile of head of ♂, with ocellar triangle and bristle sockets at higher magnification; 3c, ♂ left fore femur; *E. spodia,* n. sp., 4a, wing; 4b, profile of head of ♀, with ocellar triangle and bristle sockets at higher magnification; 4c, ♂ left fore femur.

distinct stripe anteriad of ocelli, pair of patches in anterior half, and rather broad orbits.

Head with front parallel-sided, 0.31 of head width. Head in profile as in figure 10a. Medifrontal setae in six rows. Ocellar triangle longer than wide.

Thorax with mesonotum uniformly and moderately whitish pruinose; acrostichal hairs small, in six to eight rows; prescutellar acrostichals strong, about 15° posteriad of line connecting posterior dorsocentrals. Femur 1 as in figure 10b. Wing as in figure 2, apical spot light brown and often quite diffuse, pterostigma light yellowish; substigmatal section of 1st vein often with one to three setae.

Abdomen dorsally wholly lightly pruinose, tergite 4 0.6 as long as tergite 3, tergite 5 hidden.

Male. Similar to female. Wing length 2.68 to 3.76 mm. (average of 14 specimens 3.29 mm.).

Types. Holotype (♀), allotype, and 20 paratypes (7♂♂, 13♀♀), Isla Wolf, 1–II–1964 (DQC). Three pairs of paratypes have been retained in United States National Museum.

As shown in the key, *E. cavagnaroi* is seemingly most closely related to the new species *E. schusteri* and *E. phoeba*.

Euxesta galapagensis Curran.

(Figures 3a, 3b, 3c.)

Euxesta galapagensis Curran, 1934. Proc. Calif. Acad. Sci., 4th ser., vol. 21, p. 156.

The only previously known specimen is the type without apical abdominal segments taken on Isla Española (Hood Island), October, 1905, and deposited in the collection of the California Academy of Sciences. The present collection includes the following specimens: 1♀, Isla Fernandina, west side, 1100 feet, 5–II–1964 (DQC); 1♂, Isla Wolf, 1–II–1964 (DQC); 2♂♂, Isla Santa Cruz, Academy Bay, Darwin Research Station, 26–I–1964 (ROS) and 9–II– 1964 (ROS and DQC); 3♀♀, Isla Pinzón, summit and caldera areas, 7–II–1964 (DQC). One specimen each from Santa Cruz and Pinzón have been retained in the United States National Museum.

This very unique species, as shown by the characters cited in the foregoing key, is not closely related to any known species of *Euxesta*. When the relationships of the Ulidiini are better known, it may be entitled to generic or subgeneric distinction. Additional characters are: acrostichal hairs in six rows; prescutellar acrostichals about 10° posteriad of line connecting posterior dorsocentrals; female abdominal segments wholly shining greenish black, tergite 4 somewhat less than half as long as tergite 3, tergite 5 hidden; face and clypeus lightly whitish pruinose; eye in relaxed specimens olive green with purple horizontal band as shown in figure 3b; wing as in figure 3a; femur 1 with spinose ventral bristles, as shown in figure 3c.

Euxesta nesiotis Steyskal, new species.

Female. Length of wing 2.61 to 3.44 mm. (average of 11 specimens 3.09 mm.).

Color metallic bluish to greenish, the following parts reddish: front (except ocellar triangle and vertical plates), parafacial, upper cheek, antenna, palpus, coxa 1 (except elongated blotch on outer base) and trochanters, knees, halter. Base and apex of femur 2 and femur 3 and sometimes nearly all of femur 1 also reddish; tibiae and tarsi brownish. Entire thorax lightly white pruinose, especially below. Front shining; narrow frontal orbits and upper half of face rather strongly pruinose; lower face lightly pruinose.

Head with front parallel-sided, 0.30 of head width. Head in profile similar to that of *E. galapagensis* (fig. 3b), but cheek only 0.28 as high as eye and antenna extending to oral margin. Third antennal segment elliptical, ⅓ longer than wide. Medifrontal setae in four rows. Ocellar triangle as in *E. callona* (fig. 11).

Thorax with mesonotum metallic greenish, a little bronzy across middle; acrostichal hairs small, in eight rows; prescutellar acrostichals strong, about 30° posteriad of line connecting posterior dorsocentrals, but absent in smallest specimen. Femur 1 as in *E. cavagnaroi* (fig. 10b), but ventral bristles in basal half very short and hairlike. Wing very similar to that of *E. callona,* 2.61 times as long as wide.

Abdomen shining, tergite 4 a little more than ½ as long as tergite 3, tergite 5 hidden.

Male. Similar to female. Length of wing 3.04 to 3.45 mm. (average of five specimens 3.26 mm.). Apical 2 preabdominal segments slightly shagreened and purplish, contrasting with the shining greenish black basal segments.

Types. Holotype (♀), allotype, and 14 paratypes (10 ♀ ♀, 4 ♂ ♂), Isla Pinzón, summit and upper caldera areas, 7–II–1964 (DQC). Two pairs of paratypes retained in USNM.

As shown in the key, *E. nesiotis* is apparently most closely related to *E. callona,* new species.

Euxesta notata (Wiedemann).

Ortalis notata Wiedemann, 1830. Aussereuropäische Zweiflügelige Insekten, vol. 2, p. 462.

This species was described from the United States and is abundant there. It is also definitely known from the Bahama Islands and Baja California. It has not been possible to find the specimen that Coquillett referred to this species (Coquillett, 1901, p. 376), but since at least five of the species herein recorded bear a strong superficial resemblance to *E. notata,* and since no other specimens have been taken, it must be very strongly doubted that *E. notata* occurs in the Galápagos.

Euxesta phoeba Steyskal, new species.

(Figure 1.)

Female. Length of wing 4.75 mm.

Color metallic bluish black, the following parts reddish: front, parafacial, cheek, lateral extension of face, basal segments and lower side of 3rd segment of antenna, tips of coxae, trochanters, and knees. Palpus blackish. Halter yellowish. Greater part of thorax only very lightly white pruinose, most distinctly so on sternum. Abdomen and front shining, narrow frontal orbits and entire face strongly white pruinose.

Head with front parallel-sided, 0.35 of total head width. Profile of head much like that of *E. cavagnaroi* (fig. 10a), but frontoorbital (2) and vertical bristles somewhat longer, lateral extension of face nearly as wide as cheek, and 3rd antennal segment reniform, 1.5 times as long as wide. Medifrontal setae in 6 rows. Ocellar triangle as in *Pareuxesta latifasciata* (fig. 5b).

Thorax wholly blackish, subshining; acrostichal hairs in eight rows; prescutellar acrostichals strong, only slightly posteriad of dorsocentrals. Femur 1 with seven posteroventral bristles as long as diameter of femur, two nearly complete rows of anterodorsal bristles about ¾ as long. Wing as in figure 1, 2.85 times as long as wide, only marking consisting in faint apical spot.

Abdomen wholly shining; somewhat crumpled, but tergite 4 approximately 0.75 as long as tergite 3, tergite 5 hidden.

Type. Holotype (♀), Isla Santa Cruz, Horneman Farm, 220 meters altitude 25–II–1964(DQC). This species, as shown in key, is apparently most closely related to *E. cavagnaroi*, new species.

Euxesta schusteri Steyskal, new species.

(Figure 12.)

Female. Length of wing 2.90 to 313 mm. (average of five specimens 3.01 mm.).

Color metallic bluish to greenish black, the following parts yellowish to reddish: front, parafacial, upper cheek, antenna, trochanters, remainder of legs (tarsi somewhat brownish), halter. Palpus black with tip a little brownish. Whole fly largely shining, only dorsum of thorax (except scutellum), lower pleura, sternum, and occiput very lightly pruinose, and narrow frontal orbits and face above transverse depression quite heavily white pruinose.

Head with front parallel-sided, 0.34 of head width. Profile similar to that of *E. galapagensis* (fig. 3b), but medifrontal setae fewer and antenna larger, extending to oral margin and with 3rd segment elliptical, ⅓ longer than wide. Medifrontal setae sparse and short, in four rows. Ocellar triangle as in figure 12.

Thorax nearly shining metallic greenish blue, with bronzy band across middle; acrostichal hairs small, in eight rows; prescutellar acrostichals strong,

about 15° posteriad of line connecting posterior dorsocentrals. Femur 1 as in *E. cavagnaroi* (fig. 10b). Wing very like that of *E. cavagnaroi* (fig. 2), but basal spot (extending a little distad of humeral crossvein), pterostigma, and apical spot (extending to approximately 0.4 of distance from wing tip to posterior crossvein brown.

Abdomen brightly shining, tergite 4 half as long as tergite 3, tergite 5 hidden.

MALE. Similar to female. Length of wing 2.47 to 3.29 mm. (average of 7 specimens 2.96 mm.).

TYPES. Holotype (♀), allotype, and 2♀♀ paratypes, Isla Santa Cruz, Academy Bay, Darwin Research Station, 26–I–1964 (ROS); paratypes: 1♂, same locality, coastal rock collecting, 24–I–1964 (DQC and ROS); 1♂, same locality, 5–II–1964 (ROS); 1♂, Isla Santa Cruz, Bella Vista trail, 11–II–1964 (DQC); 2♀♀, Isla Isabela (Albemarle Id.), 1–I–1899; 3♂♂, Isla Santa María (Charles Island), 5–X–1899. The specimens from Santa María and Isabela were reported upon by Coquillett (1901, p. 376) as *E. nitidiventris* Loew. One pair from Santa Cruz has been retained in United States National Museum.

This species is apparently most closely related to *E. cavagnaroi* and *E. phoeba*, new species, as indicated in the key.

Euxesta spodia Steyskal, new species.

(Figures 4a, 4b, 4c.)

FEMALE. Length of wing 2.45 to 3.36 mm. (average of 10 specimens 2.99 mm.).

Color black, appearing dull gray from heavy pruinosity, the following parts yellowish: front, upper face, cheek, palpus, labella, extreme tip of scutellum, foreleg (including coxa), middle and hindlegs (except coxa), halter. Entire insect pruinose or at least dull from microsquamation of varying degrees of density, in color whitish generally, but yellowish in four broad longitudinal stripes on mesonotum, one pair between the dorsocentral lines and one sublateral pair, and on dorsum of abdomen; medifrons only dull, not conspicuously pruinose as are fairly broad frontal orbits.

Head as in figure 4b; front a little narrowed above, 0.34 of head width; medifrontal setae bristly in two rows of 4 each; ocellar triangle elongate, with ocellar bristles placed close to anterior ocellus.

Thorax with rather coarse black mesonotal hairs, those of acrostichal series in 8 rows; prescutellar acrostichals strong, 35–40° posteriad of line connecting posterior dorsocentrals; scutellum flattened above, femur 1 as in figure 4c, ventral bristles rather fine; wing as in figure 4a, dark area usually with distinctly paler spot apicad of pterostigma.

Abdomen with tergites 3, 4, and 5 of successively slightly decreasing length, as 100, 92, 78.